CERTIFICATE

Issued to:

Applicant:
TCL Zhonghuan Energy Technology (Jiangsu) Co., Ltd.
No.20 Wenzhuang Road, Economic Development Zone
214203 Yixing City Jiangsu, China

Licensee:
TCL Zhonghuan Energy Technology (Jiangsu) Co., Ltd.
No.20 Wenzhuang Road, Economic Development Zone
214203 Yixing City Jiangsu, China

Product	:	Photovoltaic (PV) Module(s)
Trade name(s)	:	Huansheng Solar, SunPower, TCL, TCL Solar or TCL Zhonghuan
Type(s)/model(s)	:	PV module with mono c-Si cell

The product and any acceptable variation thereof as specified in the Annex to this certificate and the documents referred to therein.

DEKRA hereby declares that the above-mentioned product has been certified based on:
- an evaluation according to the standard(s) IEC TS 62804-1:2025
- a periodic surveillance
- a DEKRA certification agreement with the number 6060262

DEKRA hereby grants the right to use the DEKRA Seal certification mark with the following content:

Category	:	Photovoltaic
Keyword	:	PID Resistance
Keyword	:	Periodic Factory Inspection

The DEKRA Seal certification mark may be applied to the product or documentation as specified in this certificate for the duration and under the conditions of the DEKRA Seal certification agreement.

This certificate is issued on 17 March 2026 and expires at the latest on 24 December 2030.

Certificate number: 31-169431 REV.1

DEKRA Certification B.V.

B.T.M. Holtus
Managing Director

Cliff Lin
Certification Manager

31-169431

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	Photovoltaic (PV) Module(s)
Trade name(s)	:	Huansheng Solar, SunPower, TCL, TCL Solar or TCL Zhonghuan
Type(s)/model(s)	:	HSM-BD48-GRxxx, HSM-BD54-DAxxx, HSM-BD54-GAxxx, HSM-BD54-GCxxx, HSM-BD54-GRxxx, HSM-BD60-DAxxx, HSM-BD60-GAxxx, HSM-BD60-GCxxx, HSM-BD66-GRxxx, HSM-BD72-GCxxx, HSM-BD72-GFxxx, HSM-BD78-GFxxx, HSM-BDxxx-GKF, HSM-BDxxx-WKF, HSM-DFB-NMxxx, HSM-DFB-NMxxx-1500, HSM-DFG-NMxxx, HSM-GFB-NMxxx, HSM-GFC-NMxxx, HSM-GFD-NMxxx, HSM-GFD-PMxxx, HSM-GFE-NMxxx, HSM-GFG-NMxxx, HSM-GHF-NMxxx, HSM-GHJ-NMxxx, HSM-GKA-NMxxx, HSM-GKA-PMxxx, HSM-GKG-NMxxx, HSM-GLF-NMxxx, HSM-GRA-NExxx, HSM-GRA-NMxxx, HSM-GRG-NMxxx, HSM-GRJ-NExxx, HSM-HRI-NExxx, HSM-ND48-DRxxx, HSM-ND48-GRxxx, HSM-ND48-HRxxx, HSM-ND48-LRxxx, HSM-ND48-WRxxx, HSM-ND54-DRxxx, HSM-ND54-GRxxx, HSM-ND54-HRxxx, HSM-ND54-LRxxx, HSM-ND54-WRxxx, HSM-ND66-GKxxx, HSM-ND66-GKxxx-Y, HSM-ND66-GRxxx, HSM-ND66-GRxxx-Y, HSM-ND66-WKxxx, HSM-ND66-WRxxx, HSM-ND72-GFxxx, HSM-ND72-WFxxx, HSM-ND78-GFxxx, HSM-ND78-WFxxx, HSM-TBxxx-GK, HSM-TBxxx-GKF, HSM-TDxxx-GK, HSM-TDxxx-GKF, HSM-TDxxx-GKF-U, HSM-TDxxx-WK, HSM-TDxxx-WKF, HSM-TDxxx-WKF-U, HSM-TGxxx-GSF, HSM-TGxxx-WSF, HSM-THxxx-GK, HSM-THxxx-GKF-U, HSM-THxxx-WK, HSM-THxxx-WKF-U, HSM-TYxxx-WKF, HSM-WFD-NMxxx, HSM-WFD-PMxxx, HSM-WFE-NMxxx, HSM-WHF-NMxxx, HSM-WKA-NMxxx, HSM-WKA-PMxxx, HSM-WKG-NMxxx, HSM-WLF-NMxxx and HSM-WRA-NMxxx
Test type	:	PID-shunting
Test condition	:	± Maximum System Voltage, 85% RH, 85 °C, Stress method A with 192h

Product data – type HSM-BD48-GRxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=455-480, in steps of 5, 96 cells

Product data – type HSM-BD54-DAxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=440-480, in steps of 5, 108 cells

Product data – type HSM-BD54-GAxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=440-480, in steps of 5, 108 cells

Product data – type HSM-BD54-GCxxx

Maximum System Voltage	:	1500V

Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=465-495, in steps of 5, 108 cells

Product data – type HSM-BD54-GRxxx
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=510-540, in steps of 5, 108 cells

Product data – type HSM-BD60-DAxxx
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=490-520, in steps of 5, 120 cells

Product data – type HSM-BD60-GAxxx
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=490-520, in steps of 5, 120 cells

Product data – type HSM-BD60-GCxxx
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=520-550, in steps of 5, 120 cells

Product data – type HSM-BD66-GRxxx
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=620-675, in steps of 5, 132 cells

Product data – type HSM-BD72-GCxxx
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=620-665, in steps of 5, 144 cells

Product data – type HSM-BD72-GFxxx
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=600-635, in steps of 5, 144 cells

Product data – type HSM-BD78-GFxxx
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=650-690, in steps of 5, 156 cells

Product data – type HSM-BDxxx-GKF
Maximum System Voltage : 1500V
Design : PV module with mono c-Si cell (double-glass module)
Description : xxx=510-550, in steps of 5, 345 cells

Product data – type HSM-BDxxx-WKF

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=515-555, in steps of 5, 345 cells

Product data – type HSM-DFB-NMxxx

Maximum System Voltage	:	1000V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=430-460, in steps of 5, 174 cells xxx=428, 174 cells

Product data – type HSM-DFB-NMxxx-1500

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=430-460, in steps of 5, 174 cells xxx=428, 174 cells

Product data – type HSM-DFG-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=485-520, in steps of 5, 192 cells

Product data – type HSM-GFB-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=435-475, in steps of 5, 174 cells

Product data – type HSM-GFC-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=520-560, in steps of 5, 210 cells

Product data – type HSM-GFD-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=560-615, in steps of 5, 222 cells

Product data – type HSM-GFD-PMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=530-570, in steps of 5, 222 cells

Product data – type HSM-GFE-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=605-660, in steps of 5, 240 cells

Product data – type HSM-GFG-NMxxx

Maximum System Voltage	:	1500V

Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=485-520, in steps of 5, 192 cells

Product data – type HSM-GHF-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=580-670, in steps of 5, 198 cells

Product data – type HSM-GHJ-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=550-610, in steps of 5, 180 cells

Product data – type HSM-GKA-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=670-745, in steps of 5, 204 cells

Product data – type HSM-GKA-PMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=650-685, in steps of 5, 204 cells

Product data – type HSM-GKG-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=640-680, in steps of 5, 192 cells

Product data – type HSM-GLF-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=680-755, in steps of 5, 198 cells

Product data – type HSM-GRA-NExxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=620-680, in steps of 5, 204 cells

Product data – type HSM-GRA-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=585-645, in steps of 5, 204 cells

Product data – type HSM-GRG-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=560-605, in steps of 5, 192 cells

Product data – type HSM-GRJ-NExxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=550-605, in steps of 5, 180 cells

Product data – type HSM-HRI-NExxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=440-490, in steps of 5, 150 cells

Product data – type HSM-ND48-DRxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=430-460, in steps of 5, 96 cells

Product data – type HSM-ND48-GRxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=430-460, in steps of 5, 96 cells

Product data – type HSM-ND48-HRxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=430-460, in steps of 5, 96 cells

Product data – type HSM-ND48-LRxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=435-460, in steps of 5, 96 cells

Product data – type HSM-ND48-WRxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=435-460, in steps of 5, 96 cells

Product data – type HSM-ND54-DRxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=480-515, in steps of 5, 108 cells

Product data – type HSM-ND54-GRxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=485-515, in steps of 5, 108 cells

Product data – type HSM-ND54-HRxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=480-515, in steps of 5, 108 cells

Product data – type HSM-ND54-LRxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=490-520, in steps of 5, 108 cells

Product data – type HSM-ND54-WRxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=490-520, in steps of 5, 108 cells

Product data – type HSM-ND66-GKxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=685-750, in steps of 5, 132 cells

Product data – type HSM-ND66-GKxxx-Y

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=685-750, in steps of 5, 132 cells

Product data – type HSM-ND66-GRxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=595-670, in steps of 5, 132 cells

Product data – type HSM-ND66-GRxxx-Y

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=595-670, in steps of 5, 132 cells

Product data – type HSM-ND66-WKxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=690-725, in steps of 5, 132 cells

Product data – type HSM-ND66-WRxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=595-630, in steps of 5, 132 cells

Product data – type HSM-ND72-GFxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=570-605, in steps of 5, 144 cells

Product data – type HSM-ND72-WFxxx

Maximum System Voltage	:	1500V

Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=580-605, in steps of 5, 144 cells

Product data – type HSM-ND78-GFxxx

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=615-645, in steps of 5, 156 cells

Product data – type HSM-ND78-WFxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=625-655, in steps of 5, 156 cells

Product data – type HSM-TBxxx-GK

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=575-610, in steps of 5, 378 cells

Product data – type HSM-TBxxx-GKF

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=480-505, in steps of 5, 315 cells

Product data – type HSM-TDxxx-GK

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=625-670, in steps of 5, 414 cells

Product data – type HSM-TDxxx-GKF

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=510-555, in steps of 5, 345 cells

Product data – type HSM-TDxxx-GKF-U

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=510-555, in steps of 5, 345 cells

Product data – type HSM-TDxxx-WK

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=635-675, in steps of 5, 414 cells

Product data – type HSM-TDxxx-WKF

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=515-560, in steps of 5, 345 cells

Product data – type HSM-TDxxx-WKF-U

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=515-560, in steps of 5, 345 cells

Product data – type HSM-TGxxx-GSF

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=530-585, in steps of 5, 330 cells

Product data – type HSM-TGxxx-WSF

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=530-585, in steps of 5, 330 cells

Product data – type HSM-THxxx-GK

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=630-670, in steps of 5, 408 cells

Product data – type HSM-THxxx-GKF-U

Maximum System Voltage	:	1500V
Design	:	PV module with mono c-Si cell (double-glass module)
Description	:	xxx=530-555, in steps of 5, 340 cells

Product data – type HSM-THxxx-WK

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=635-675, in steps of 5, 408 cells

Product data – type HSM-THxxx-WKF-U

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=515-560, in steps of 5, 340 cells

Product data – type HSM-TYxxx-WKF

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=385-420, in steps of 5, 260 cells

Product data – type HSM-WFD-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=570-605, in steps of 5, 222 cells

Product data – type HSM-WFD-PMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=540-570, in steps of 5, 222 cells

Product data – type HSM-WFE-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=620-650, in steps of 5, 240 cells

Product data – type HSM-WHF-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=595-615, in steps of 5, 198 cells

Product data – type HSM-WKA-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=690-730, in steps of 5, 204 cells

Product data – type HSM-WKA-PMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=655-690, in steps of 5, 204 cells

Product data – type HSM-WKG-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=645-685, in steps of 5, 192 cells

Product data – type HSM-WLF-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=690-720, in steps of 5, 198 cells

Product data – type HSM-WRA-NMxxx

Maximum System Voltage	:	1500V
Design	:	PV Module with mono c-Si cell (backsheet module)
Description	:	xxx=600-625, in steps of 5, 204 cells

TESTS

Test requirements
IEC TS 62804-1:2025

Test result
The test results are documented in DEKRA test file 625724500.

Additional information
This certificate replaces certificate No. 31-169431 which we hereby declare invalid.

The list of components is laid down in test report 6257245A.50.

Conclusion
The examination has confirmed that all requirements were met.

Factory locations
Huansheng New Energy (Jiangsu) Co., Ltd.
No. 28, Tengfei Road, Qiting Street
214203 Yixing City Jiangsu, China

Huansheng New Energy (Tianjin) Co., Ltd.
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300462 Tianjin, China

Huansheng New Energy (Inner Mongolia) Co., Ltd.
No.15 Baolier Street, Saihan District
010010 Hohhot City Nei Mongol, China

Trade name(s): Huansheng Solar stands for 环晟光伏 HUANSHENG SOLAR

TCL Solar stands for TCL SOLAR

TCL stands for TCL

SunPower stands for SUNPOWER

TCL Zhonghuan stands for TCL 中环

Unique Identifier

The DEKRA Seal has been updated with a modern look. This certificate exclusively features the new seal, which must be used for all new certifications going forward. Please ensure this version is used consistently for all future certifications to maintain a clearer and more contemporary representation.